

ABSTRACT

An electrode structure used in a plasma processing apparatus which performs a predetermined process on an object (W) to be processed by using a plasma in a process chamber (26) in which a vacuum can be formed. An electrode unit (38) has a heater unit (44) therein. A cooling block (40) having a cooling jacket (58) is joined to the electrode unit (38) so as to cool the electrode unit. A heat resistant metal seal member (66A, 66B) seals an electrode-side heat transfer space (62, 64) formed between the electrode unit and the cooling block. Electrode-side heat transfer gas supply means (94) supplies a heat transfer gas to the electrode-side heat transfer space. Accordingly, a sealing characteristic of the electrode-side heat transfer space does not deteriorate even in a high temperature range such as a temperature higher than 200°C and, for example, a range from 350°C to 500°C, and the heat transfer gas does not leak.

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